

What is Claimed Is:

1. A support structure for use with an elevated I-beam having a generally vertical web, a generally horizontal upper
5 flange at an upper end of the web, and a generally horizontal lower flange at a lower end of the web, wherein the upper flange, the web, and the lower flange define a first channel of the I-beam on a first side of the web and a second channel of the I-beam on an opposite second side of the web, the
10 support structure comprising:

a first clamping member having a beam-engaging portion that is configured and adapted to be at least partially positioned within the first channel of the I-beam;

a second clamping member having a beam-engaging
15 portion that is configured and adapted to be at least partially positioned within the second channel of the I-beam, the second clamping member being movably connected to the first clamping member in a manner so that the first and second clamping members are moveable relative to each other between a
20 clamped configuration wherein the beam engaging portions of the first and second clamping members engage at least a portion of the web of the I-beam between them and an unclamped position wherein the beam engaging portions of the first and second clamping members are sufficiently spaced from one

another to permit disengagement of the support structure from the I-beam;

a ladder attached to one of the first and second clamping members; and

5 a support platform attached to the other of the first and second clamping members.

2. The support structure of claim 1 wherein the first clamping member and the second clamping member are pivotally
10 connected to each other in a manner to permit pivoting movement of the first and second clamping members relative to one another about an axis.

3. The support structure of claim 2 wherein the axis is
15 located generally adjacent and generally parallel to the upper flange of the I-beam such that gravitational force acting downwardly on the first clamping member results in a generally horizontal force being exerted inwardly by the first clamping member against a portion of the web that partially bounds the
20 first channel, and gravitational force acting downwardly on the second clamping member results in a generally horizontal force being exerted inwardly by the second clamping member against a portion of the web that partially bounds the second channel, when the support structure is attached to the I-beam

and is in the clamped configuration.

4. The support structure of claim 1 wherein the support platform extends generally horizontally and outwardly from the I-beam in a cantilevered fashion when the support structure is attached to the I-beam and is in the clamped configuration.

5. The support structure of claim 1 wherein the beam-engaging portion of the first clamping member is configured and adapted to engage the upper flange, the web, and the lower flange when the support structure is attached to the I-beam and is in the clamped configuration.

6. The support structure of claim 5 wherein portions of the upper flange, the web, and the lower flange of the I-beam together define a generally C-shaped first channel surface that partially bounds the first channel, and wherein the beam-engaging portion of the first clamping member is dimensioned to mate with the first channel surface when the support structure is attached to the I-beam and is in the clamped configuration.

7. The support structure of claim 5 wherein the beam-engaging portion of the second clamping member is configured

and adapted to engage the upper flange, the web, and the lower flange when the support structure is attached to the I-beam and is in the clamped configuration.

5 8. The support structure of claim 5 wherein portions of the upper flange, the web, and the lower flange define a generally C-shaped second channel surface that partially bounds the second channel, and wherein the beam-engaging portion of the second clamping member is dimensioned to mate
10 with the second channel surface when the support structure is attached to the I-beam and is in the clamped configuration.

 9. The support structure of claim 1 wherein the support platform includes a generally horizontal support surface that
15 is of sufficient area to support a worker situated thereon when the support structure is attached to the I-beam and is in the clamped configuration.

 10. A support structure for use with an I-beam having a
20 generally vertical web, a generally horizontal upper flange at an upper end of the web, and a generally horizontal lower flange at a lower end of the web, the upper flange, the web, and the lower flange defining a first channel with a generally C-shaped first channel surface on one side of the web and a

second channel with a generally C-shaped second channel surface on an opposite side of the web, the support structure comprising:

a first clamping member having a beam-engaging
5 portion that is dimensioned to mate with the first channel surface; and

a second clamping member having a beam-engaging portion that is dimensioned to mate with the second channel surface, the second clamping member being pivotally connected
10 to the first clamping member in a manner so that the first and second clamping members are moveable relative to one another between a clamped configuration wherein the first and second clamping members mate with the first and second channel surfaces, respectively, and an unclamped configuration wherein
15 the beam engaging portions of the first and second clamping members are sufficiently spaced from one another to permit disengagement of the support structure from the I-beam;

wherein the pivotal connection of the first and second clamping members is located generally adjacent the
20 upper flange of the I-beam so that weight of the first clamping member results in a generally horizontal force being exerted inwardly by the first clamping member against the first channel surface and weight of the second clamping member results in a generally horizontal force being exerted inwardly

by the second clamping member against the second channel surface, when the support structure is secured to the I-beam and is in the clamped configuration.

5 10. The support structure of claim 9 further comprising a support platform attached to one of the first and second clamping members.

10 11. The support structure of claim 10 wherein the support platform includes a generally horizontal support surface that is of sufficient area to support a worker situated thereon.

15 12. The support structure of claim 10 further comprising a ladder attached to the other of the first and second clamping members.

20 13. The support structure of claim 10 wherein the support platform extends generally horizontally and outwardly from the I-beam in a cantilevered manner when the support structure is secured to the I-beam and is in the clamped configuration.

14. A support structure for use with an elevated I-beam

having a generally vertical web, a generally horizontal upper flange at an upper end of the web, and a generally horizontal lower flange at a lower end of the web, the upper flange, the web, and the lower flange defining a first channel with a

5 generally C-shaped first channel surface on one side of the web and a second channel with a generally C-shaped second channel surface on an opposite side of the web, the support structure comprising:

a ladder having a pair of generally parallel side

10 rails with a plurality of generally horizontal steps extending therebetween, the ladder having a first clamping member connected to an upper end of at least one of the side rails, the first clamping member having a beam-engaging portion that is dimensioned to mate with the first channel surface of the

15 I-beam; and

a support platform having a generally horizontal support surface that is of sufficient area to support a worker situated thereon, the support platform having a second clamping member with a beam-engaging portion that is

20 dimensioned to mate with the second channel surface of the I-beam, the second clamping member being pivotally connected to the first clamping member in a manner so that the first and second clamping members are moveable relative to each other between a clamped configuration wherein the first and second

clamping members mate with the first and second channel surfaces, respectively, and an unclamped configuration wherein the beam engaging portions of the first and second clamping members are sufficiently spaced from one another to permit
5 disengagement of the support structure from the I-beam.

15. The support structure of claim 14 wherein the pivotal connection of the first and second clamping members is located generally adjacent the upper flange of the I-beam so
10 that weight of the ladder results in a generally horizontal force being exerted inwardly by the beam-engaging portion of the first clamping member and weight of the support platform results in a generally horizontal force being exerted inwardly by the beam-engaging portion of the second clamping member
15 against the second channel surface, when the support structure is secured to the I-beam and is in the clamped configuration.

16. The support structure of claim 14 wherein the support platform extends from the I-beam in a cantilevered
20 manner when the support structure is secured to the I-beam and is in the clamped configuration.

17. A method comprising:

providing an I-beam having a generally vertical web, a

generally horizontal upper flange at an upper end of the web,
and a generally horizontal lower flange at a lower end of the
web, the upper flange, the web, and the lower flange defining
a first channel with a generally C-shaped first channel

5 surface on one side of the web and a second channel with a
generally C-shaped second channel surface on an opposite side
of the web;

providing a support structure comprising first and second
clamping members, a ladder, and a platform, the first clamping
10 member being movably connected to the second clamping member;

removably securing the support structure to the I-beam by
moving the first clamping member relative to the second
clamping member in a manner so that a portion of the first
clamping member is positioned within the first channel of the
15 I-beam and a portion of the second clamping member is
positioned within the second channel of the I-beam, whereby
the support structure is in interlocked geometry with the I-
beam.

20 18. The method of claim 17 further comprising the step
of removing the support structure from the I-beam by moving
the first clamping member relative to the second clamping
member in a manner to position the first and second clamping
members outside of the first and second channels of the

I-beam.

19. A method in accordance with claim 17 wherein the first and second clamping members of the support structure are
5 pivotally connected to each other and wherein the step of removably securing the support structure to the I-beam and the step of removing the support structure from the I-beam each comprise pivoting the first and second clamping members relative to each other.

10

20. A method in accordance with claim 19 wherein the step of providing the support structure occurs in a manner such that the ladder of the support structure is attached to the first clamping member and the platform is attached to the
15 second clamping member.

21. A method in accordance with claim 20 wherein the platform extends horizontally and in a cantilevered manner from the second clamping member when the support structure is
20 secured to the I-beam.